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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,813	07/17/2003	Vijay Vasant Bokade	4062-82	8988

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NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER

DANG, THUAN D

ART UNIT PAPER NUMBER

1764

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/620,813	BOKADE ET AL.	
	Examiner	Art Unit	
	Thuan D. Dang	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>8/27/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, it is unclear what the function of the polymeric membrane is.

Regarding claim 4, the expression "the catalytic membrane reactor is provided with an inert packing material" is indefinite since it is unclear what the difference between the inert material and the polymeric membrane.

Regarding claim 7, it is unclear if the polymeric membrane is coated inside or outside of the reactor.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 17, 19-20, and 23-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haag et al (5,100,596) in view of WO 01/62692A.

Haag discloses a process of alkylation of benzene with an alkylating agent such as olefins, alcohol in a membrane reactor provided with polymer membrane containing zeolitic material such as beta zeolite (the abstract; col. 3, lines 53-58; col. 5, lines 22-47; col. 9, line 68 thru col. 10, line 2; examples).

The condition of the reaction can be found on col. 10, lines 3-8).

Hydrogen is present in the feed (col. 10, lines 17-24).

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Haag does not disclose using isopropanol with benzene to produce cumene. However, WO discloses that cumene can be produced by alkylating benzene with isopropanol (the abstract).

It would have been obvious to one having ordinary skill in the art who wishes to produce cumene at the time the invention was made to have modified the Haag process by using isopropanol and benzene since WO discloses cumene can be effectively produced by alkylating benzene with isopropanol.

Haag does not disclose what kind of reactor used for the process. However, It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Haag process by using any kind reactor since it is expected that using any kind of reactors would yield similar results. Further, it has been held that apparatus limitations are given no patentable weight in method claims. *Stalego v. Heymes et al*, 120 USPQ 473; 263 F2d 334.

The ratio of Si and Al of the zeolite can be found on such as column 2, lines 16-26).

Haag does not disclose the surface area of the zeolite. However, the surface area of the zeolite is a parameter affecting to the performance of the zeolite for each specific situation. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Haag's process by using zeolitic materials having appropriate surface area to optimize the performance of the zeolite for the alkylation process.

As in example 14, Haag discloses using an alumina support which is not different from the structural packing used by applicants.

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Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haag et al (5,100,596) in view of WO 01/62692A further in view of Fehlner et al (5,474,681).

Haag does not disclose using a silicone rubber for making the membrane (see entire patent). However, Fehlner discloses that silicone polymer can be used to prepare catalytic membrane for alkylation of aromatic (abstract; col. 6, lines 27-38).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Haag process by using polymer of silicone disclosed by Fehlner to prepare the membrane to arrive at the applicants' claimed process since the silicone as disclosed by Fehlner can be used as an effectively catalytic membrane.

Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haag et al (5,100,596) in view of WO 01/62692A in view of Fehlner et al (5,474,681) in view of Kawamura (5,932,104).

Haag discloses a process as above.

Haag does not disclose how and by what material the membrane is prepared as called for in claims 21 and 22. However, Kawamura disclose preparing a membrane by using similar materials and steps as using by applicants (the abstract; examples).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Haag process by using the method to prepare the membrane disclosed by Kawamura to arrive at the applicants' claimed process since it is expected that using any method to prepare silicone membrane would yield the same result.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuan D. Dang whose telephone number is 571-272-1445. The examiner can normally be reached on Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thuan D. Dang
Primary Examiner
Art Unit 1764

10620813.20050818

A handwritten signature in black ink, appearing to be 'Thuan D. Dang', written in a cursive style with a long horizontal stroke at the end.